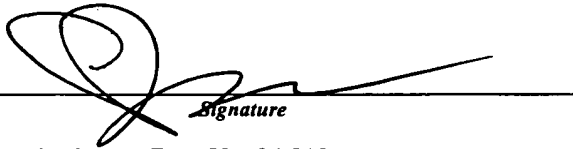
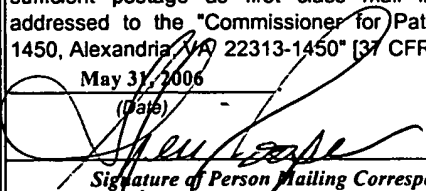


NEW

| | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------|
| TRANSMITTAL LETTER (General - Patent Pending) | | | | Docket No. Muller-51 | |
| In Re Application Of: <div style="text-align: center;">Peter Finmans, et al</div> | | | | | |
| Application No. 10/563,237 | Filing Date January 3, 2006 | Examiner | Customer No. | Group Art Unit | Confirmation No. 8670 |
| Title: Process For Preparing Metal Salts Of Unsaturated Short-Chain Carboxylic Acids And Use Thereof | | | | | |
| <u>COMMISSIONER FOR PATENTS:</u> | | | | | |
| Transmitted herewith is: English Translation of International Preliminary Report On Patentability | | | | | |
| in the above identified application. | | | | | |
| <input checked="" type="checkbox"/> No additional fee is required. <input type="checkbox"/> A check in the amount of _____ is attached. <input checked="" type="checkbox"/> The Director is hereby authorized to charge and credit Deposit Account No. 02-4345 as described below. <div style="margin-left: 20px;"><input type="checkbox"/> Charge the amount of _____ <input type="checkbox"/> Credit any overpayment. <input checked="" type="checkbox"/> Charge any additional fee required.</div> <input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached. | | | | | |
| WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038. | | | | | |
|  _____ <i>Signature</i> | | | Dated: May 31, 2006 | | |
| C. James Bushman, Reg. No. 24,810 Browning Bushman P.C. 5718 Westheimer, Suite 1800 Houston, Texas 77057-5771 Tel.: 713-266-5593 Fax: 713-266-5169 | | | <div style="border: 1px solid black; padding: 5px;"><p>I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on <div style="text-align: center;">May 31, 2006 (Date)</div> _____ <i>Signature of Person Mailing Correspondence</i> Sheri Cooper _____ <i>Typed or Printed Name of Person Mailing Correspondence</i></p></div> | | |
| cc: | | | | | |

JUN 05 2006

TRANSMITTAL LETTER
(General - Patent Pending)

Docket No.
Muller-51

In Re Application Of:

Peter Finmans, et al

Application No.

10/563,237

Filing Date

January 3, 2006

Examiner

Customer No.

Group Art Unit

Confirmation No.

8670

Title:

Process For Preparing Metal Salts Of Unsaturated Short-Chain Carboxylic Acids And Use Thereof

COMMISSIONER FOR PATENTS:

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English Translation of International Preliminary Report On Patentability

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Signature

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C. James Bushman, Reg. No. 24,810
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5718 Westheimer, Suite 1800
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Tel.: 713-266-5593
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May 31, 2006

(Date)


Signature of Person Mailing Correspondence

Sheri Cooper

Typed or Printed Name of Person Mailing Correspondence

CC:

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

| | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------|-----------------------|
| Applicant's or agent's file reference D-03004 PCT | FOR FURTHER ACTION | | See Form PCT/IPEA/416 |
| International application No. PCT/DE2004/001414 | International filing date (day/month/year) 02.07.2004 | Priority date (day/month/year) 03.07.2003 | |
| International Patent Classification (IPC) or national classification and IPC C07C51/41, C07C57/04, C09D11/10, C08F2/48, A23L3/3436 | | | |
| Applicant SASOL GERMANY GMBH | | | |

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

- a. ☒ (sent to the applicant and to the International Bureau) a total of 10 sheets, as follows:
- ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

- b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s))

_____ containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the report
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

| | |
|-----------------------------------------|-----------------------------------|
| Date of submission of the demand | Date of completion of this report |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2004/001414

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1, 4-10, 12, 14, 16-27 as originally filed/furnished
- pages* 11 received by this Authority on 30.05.2005 with letter of 29.03.2005
- pages* 2, 2a, 3, 13, 15 received by this Authority on 16.09.2005 with telefax
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1-20 received by this Authority on 16.09.2005 with telefax
- nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2004/001414

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability:
citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 1-20

YES

Claims

NO

Inventive step (IS)

Claims 1-20

YES

Claims

NO

Industrial applicability (IA)

Claims 1-20

YES

Claims

NO

2. Citations and explanations (Rule 70.7)

D1 US 5 998 646

D2 SU 614 089

D3 US 3 923 716, cited in the application

D4 BE 763 157

D5 US 3 337 391

D6 US 2 940 957

D7 FR 1 205 366

D8 JP 63 247 037, Derwent abstract

D9 JP 040 08 298

D10 US 5 952 151

1. Amendments - PCT Article 34(2)(b)

Claim 1 has been reworded such that it is restricted to the constant supply of oxygen where M = Al, Si, Sn, La, Zr, Cu and/or Zn, the reaction solution being at least 50% oxygen-saturated (new claim 1). The constant supply of oxygen where M = Mg, Ca, Al, Si, Sn, La, Ti, Zr, Cu and/or Zn is supported by the original application (original claim 1 and page 3, lines 34-36). Owing to the disclosures of D1, D5, D6 and D8, the options M = Mg, Ca and Ti were deleted from claim 1. The obvious error in claim 3 "alcohol-" instead of "alcoholate-group" has been

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2004/001414

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability:
citations and explanations supporting such statement

corrected (PCT Rule 91.1). Examples 6 and 7, where $M = \text{Ti}$ and Mg , which now no longer fall under the scope of protection sought, are characterised as comparative examples. The description has been brought into line with the new set of claims. **D1** is mentioned on page 2 (PCT Rule 5.1(a)(ii)). The criteria of PCT Article 34(2)(b) are therefore met.

2. Novelty - PCT Article 33(2)

D2 describes acrylic acid Li salt; **D4** $\text{C}_{11}\text{H}_{19}\text{O}_2\text{Li}$ salt, and **D7** sorbinic acid Na salt. These carboxylic acid metal salts differ from the formula $\text{C}_n\text{H}_{2n-1}\text{COOM}$ in that $M = \text{Li}$ or Na , $n > 6$, or in that there is more than one double bond present. Acrylic acid Al salt from **D3** is no longer produced by the reaction of aluminium alcoholate.

Uses of acrylic acid metal salts in coatings, printing ink compositions, pharmaceuticals or fungicides are known from **D1**, **D5-D6**, and **D8-D10**.

Carboxylic acid **Ti** salt of the formula $(\text{C}_n\text{H}_{2n-1}\text{COO})\text{M}_a(\text{R}^1)$ and/or based on maleic acid are known from the prior art (**D1**, **D5**, **D6**). Production by the reaction of metal alcoholate or $\text{M}(\text{R}^1)_a$ with corresponding carboxylic acids is also already disclosed in these documents (**D1**, **D5** and **D6**). No inert reaction conditions are disclosed in **D1** and **D6**. The absence of oxygen in these documents cannot therefore be excluded. Oxygen saturation is not mentioned in these documents.

Novelty can therefore be acknowledged for the subjects of

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2004/001414

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability:
citations and explanations supporting such statement

claims 1-20.

3. Inventive step - PCT Article 33(3)

D1 is considered the closest prior art. The carboxylic acid metal salts from D1 differ in that they are Ti salts (not contained in claim 1). The problem addressed by the present application is that of providing a method in which pure carboxylic acid metal salts of different metal ions can be more easily produced (fewer and simpler reaction steps; more easily separable and fewer side products) and undesired polymer compounds are avoided. The solution is the method as per claim 1, i.e. the reaction of carboxylic acid of the formula $C_nH_{2n-1}COOH$ and/or maleic acid with metal alcoholate or $M(R^1)_c$, where $n = 2-6$, with a double bond in the 2 or 3 position and $M = Al, Si, Sn, La, Zr, Cu$ and/or Zn , with a constant supply of oxygen, such that the reaction solution is at least 50% oxygen-saturated.

Example 1 uses aluminium-tri-sec-butanolate and acrylic acid in the presence of polymerisation-inhibiting substances. It was carried out with nitrogen capping (page 11, line 12). The polymerised product is formed. The further examples 2-10 are carried out in the presence of oxygen. No formation of polymers is identified. The proposed solution therefore solves the present technical problem. Example 6 of the application relates to the method where $M = Ti$, with a constant supply of oxygen up to 15-30 vol.%. Example 7 uses $M = Mg$, whilst examples 2-5 use Al or Zr as the metal. This method is therefore carried out with the same technical effects independently

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2004/001414

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability:
citations and explanations supporting such statement

of M. The production of the polymerised products is therefore only avoided by the oxygen saturation of the reaction solution. The reaction is carried out in D1 under exclusion of the atmosphere. Since no details are given in D1 as to the oxygen saturation and the consequences thereof for polymerised compounds, the proposed solution is non-obvious. The subject matter of claim 1 and of dependent claims 2-20 therefore involves an inventive step.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2004/001414

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The expressions "preferably" and "in particular" are unclear, since they do not bring about any restriction in the scope of protection sought by the claim. The feature that follows these expressions is considered entirely optional (PCT Guidelines II-5.40). If this is not intended to be the case, each of these features should be reworded as an independent claim.